

REMARKS

Claims 1, 5, 6 and 9-56 are canceled; claims 2-4, 7 and 8 are amended; and claims 2-4, 7 and 8 are pending in the application.

The pending claims stand rejected as being unpatentable over Cole, either alone, or in combination with Applicant's admitted prior art.

Applicant has amended claim 7, and believes that such amendment places claim 7 in condition for allowance. The remaining claims 2-4 and 8 depend from claim 7, and are therefore believed to be in condition for allowance for at least the reasons for which claim 7 is in condition for allowance.

Amended claim 7 recites a semiconductor package containing an interposer construction having only a single dielectric support member and one or more conductive traces contacting the single dielectric support member. The claim further recites a semiconductor die electrically connected with at least one of the traces, and that at least one of the circuit traces is between the semiconductor die and the dielectric support member. Additionally, the claim recites that the dielectric support member has a first surface, and an opposing second surface. The claim further recites that the circuit traces are over the first surface, and that openings extend through the second surface to the circuit traces. Amended claim 7 additionally recites that contact pads are within one or more of the openings and in electrical connection with one or more of the circuit traces, with the contact pads being entirely contained within the openings. Finally, the claim recites that solder balls are in electrical connection with contact pads.

Amended claim 7 is believed allowable over the cited references for at least the reason that there is no motivation within the references for forming the claim 7 recited package having an interposer with only a single dielectric support member, openings extending through the dielectric support member to circuit traces, and contact pads entirely contained within the openings.

The cited reference of Cole shows an interposer construction in figure 9 having a single dielectric material 38, and having openings extending through the dielectric material to circuit traces 36. However, to the extent that contact pads are formed within such openings, the contact pads correspond to conductive material 34 which is not entirely contained within the openings.

The cited reference of Applicant's admitted prior art shows in Applicant's figure 1 a semiconductor package having contact pads 32 and 34 entirely contained within openings in dielectric material 20, but the interposer of such semiconductor package is not containing only a single dielectric material.

The individual cited references thus show the individual bits and pieces of amended claim 7. However, there is no teaching or motivation within the references for combining such bits and pieces to form the claim 7 recited package having an interposer containing only a single dielectric material, and also having contact pads entirely contained within openings in such single dielectric material. The cited reference of Cole is the only reference teaching an interposer containing only a single dielectric material, and such reference specifically shows that the contact pad material extends outward of the openings across a shown upper surface of the dielectric material. The contact pad material

extending along the shown upper surface of the dielectric material is used for forming electrical connections to other layers above the contact pad material, as shown in figure 10 of Cole (see, for example, the conductive material 426 extending to electrically connect with contact pad material along an upper surface of dielectric material 14). Accordingly, inclusion of the contact pad material of Cole entirely within the openings in the dielectric material would destroy Cole's disclosed purpose of utilizing the contact pad material outward of the openings in forming electrical connections. It would therefore not be obvious to use contact pad material entirely contained within the openings of Cole, regardless of the teachings of Applicant's admitted prior art of a construction having contact pad material entirely contained within an opening in a dielectric material.

For the above-discussed reasons, amended claim 7 is not rendered obvious by the cited references. Applicant therefore requests formal allowance of claim 7 in the Examiner's next action. Claims 2-4 and 8 depend from claim 7, and are therefore allowable for least the reasons discussed above regarding claim 7. Accordingly, Applicant respectfully requests that the Examiner's next action be a Notice of Allowance formally allowing all of the pending claims 2-4, 7 and 8.

Respectfully submitted,

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By: 

David G. Latwesen, Ph.D.
Reg. No. 38,533